Author index

Compiled by Carol Smith

Abbott, Alison, 5-HT_3 antagonists and ligands for dopamine D_1- and autoreceptors offer new leads for antipsychotic drugs 49
Abbott, Alison, *see* Jenkinson, Donald
Abbott, Alison, *see* Fredholm, Bertil
Andersen, Peter H., Gingrich, Jay A., Bates, Michael D., Dearry, Allen, Falardeau, Pierre, Senogles, Susan E. and Caron, Marc G., Dopamine receptor subtypes: beyond the D_1/D_2 classification 231
Anderson, Gary, New drugs for asthma (IUPHAR satellite) 348
Atkinson, Jeffrey, Coronary and cerebrovascular effects of antihypertensive drugs (IUPHAR satellite) 346
Attwell, David, *see* Nicholls, David
Audibert, Françoise M., *see* Riveau, Gilles J.

Balls, Michael, Middle road to 'victory' (Letter) 275
Balster, Robert, L., *see* Willetts, Joyce
Barlow, Richard, Enantiomers: how valid is Pfeiffer's rule? 148
Barlow, Richard, Barlow replies (Letter) 316
Barlow, Richard, Cumulative frequency curves in population analysis 404
Barnard, Eric A. Henley, Jeremy M., EAA PHARMACOLOGY: The non-NMDA receptors: types, protein structure and molecular biology 504
Barnes, Peter J., Belvisi, Maria G. and Rogers, Duncan F., Modulation of neurogenic inflammation: novel approaches to inflammatory disease 185
Barnes, Nicholas M., *see* Pratt, Gerard D.
Bates, Michael D., *see* Andersen, Peter H.
Beaumont, Ann, see Roques, Bernard P.
Beavo, Joseph A. and Reifsnyder, David H., Primary sequence of cyclic nucleotide phosphodiestrase isozymes and the design of selective inhibitors 150
Belvisi, Maria G., *see* Barnes, Peter J.
Bevan, Stuart and Szolcsányi, János, Sensory neuron-specific actions of capsaicin: mechanisms and applications 330
Bianchetti, Alberto, *see* Manara, Luciano
Bockaert, Joel, *see* Schoepp, Darryle
Boeynaems, Jean-Marie and Pearson, Jeremy D., P_2 purinoceptors on vascular endothelial cells: physiological significance and transduction mechanisms 34
Boscá, Lisardo, Junco, Maria and Díaz-Guerra, Maria J. M., Substrate specificity of protein kinase C inhibitors (Letter) 477
Bousquet, P., Too early to subtype imidazoline receptors 7
Bowery, Norman G., GABA transporter protein cloned from rat brain 435
Bowery, Norman, G., *see* Pratt, Gerard D.
Bowery, Norman G., *see* Tortella, Frank C.
Breimer, D. D. and Schellens, J. H. M., A 'cocktail' strategy to assess *in vivo* oxidative drug metabolism in humans 223
Bronner, Christian, *see* Mousli, Mouafak
Budai, Dénes, *see* Duckles, Sue Piper
Bueb, Jean-Luc, *see* Mousli, Mouafak
Bult, Hidde, EDRF(s) and EDRF-related substances (IUPHAR satellite) 344
Burchell, Brian, *see* Tephly, Thomas R.

Caron, Marc G., *see* Lefkowitz, Robert J.
Caron, Marc G., *see* Andersen, Peter H.
Changeux, Jean-Pierre, The *TiPS* Lecture: The acetylcholine receptor: an allosteric protein prototype of ligand-gated ion channels 485
Chavkin, Charles, The sigma enigma: biochemical and functional correlates for the haloperidol-sensitive sigma binding sites 213
Chignard, Michel and Pretolani, Marina, Advances in platelet-activating factor research (IUPHAR satellite) 345
Chipkin, Richard E., D_1 antagonist in clinical trial (Letter) 185
Church, John, Neuromodulatory effects of dextromethorphan: role of NMDA receptors in responses (Letter) 146
Cohen, Jack S., *see* Kaplan, Ofer
Collingridge, Graham L. and Singer, Wolf, EAA PHARMACOLOGY: Excitatory amino acid receptors and synaptic plasticity 290
Collingridge, Graham, *see* Lodge, David
Connick, Jonathan, Psychotomimetic effects and sigma ligands (Letter) 274
Cook, Nigel S. and Ubben, David, Fibrinogen as a major risk factor in cardiovascular disease 444
Corda, Daniela, Luini, Alberto and Garattini, Silvio, Selectivity of action can be achieved with compounds acting at second messenger targets 471
Cowburn, Richard F., *see* Fowler, Christopher J.
Crain, Stanley M. and Shen, Ke-Fei, Opioids can evoke direct receptor-mediated excitatory effects on sensory neurons 77
Cros, Gerard, Pathophysiology and treatments of diabetes mellitus (IUPHAR satellite) 343
Cuenod, Michel, Quang Do, Kim and Streit, Peter, Homocysteic acid as an endogenous excitatory amino acid (Letter) 477
Curzon, Gerald, How reserpine and chlorpromazine act: key discoveries on the history of psychopharmacology 61
Curzon, Gerald and Kennett, Guy A., *m*-CPP: a tool for studying behavioural responses associated with 5-HT_{1C} receptors 181

Dainty, Ian A., *see* see Leff, Paul
Davies, Donald S., 8th International symposium on microsomes and drug oxidations (IUPHAR satellite) 342
Davis, S. S., Overcoming barriers to the oral administration of peptide drugs 353
De Clercq, Erik, Targets and strategies for the antiviral chemotherapy of AIDS 198
De Mey, Jo G. R., *see* Struyker Boudier, Harry A. J.
Dearry, Allen, *see* Andersen, Peter H.
Demeneix, Barbara, Study of epigenesis throws up new targets for drug research 389
Di Chiara, Gaetano, *In-vivo* brain dialysis of neurotransmitters 116
Díaz-Guerra, Maria J. M., *see* Bosca, Lisardo
Dickenson, Anthony H., A cure for wind up: NMDA receptor antagonists as potential analgesics 307
Dickson, Robert B. and Gottesman, Michael M., Understanding of the molecular basis of drug resistance in cancer reveals new targets for chemotherapy 305
Dilger, James P. and Firestone, Leonard L., More models described for molecular 'target' of anesthetics and alcohols 431
Dingledine, Raymond, McBain, Chris J. and McNamara, James O., EAA PHARMACOLOGY: Excitatory amino acid receptors in epilepsy 334
Dion, Stéphane, *see* Regoli, Domenico
Docherty, Jim, The pharmacology of adrenoceptors (IUPHAR satellite) 341
Dougall, Iain G., *see* Leff, Paul
Dourish, C. T., *see* Ravard, S.
Drapeau, Guy, *see* Regoli, Domenico
Duckles, Sue Piper and Budai, Dénes, Stimulation intensity as critical determinant of presynaptic receptor effectiveness 440

Edwards, Gillian and Weston, Arthur H.,

Structure–activity relationships of K^+ channel openers 417
Eliopoulos, Elias, *see* Findlay, John
Epand, Richard M. and Lester, David S., The role of membrane biophysical properties in the regulation of protein kinase C activity 317

Fagg, Graham E., *see* Young, Anne B.
Fallardeau, Pierre, *see* Andersen, Peter H.
Farmer, Stephen G., *see* Goldie, Roy G.
Fernandes, Lynette B., *see* Goldie, Roy G.
Fersht, Alan R., *see* Ward, Walter H. J.
Findlay, John and Eliopoulos, Elias, Three-dimensional modelling of G protein-linked receptors 492
Firestone, Leonard L., *see* Dilger, James P.
Fowler, Christopher J., O'Neill, Cora, Garlind, Anita and Cowburn, Richard F., Alzheimer's disease: is there a problem beyond recognition? 183
Fox, Philip, *see* Connick, Jonathan
Fredholm, Bertil and Abbott, Alison, New targets for drug action: is high selectivity always beneficial? 175
Fryer, Allison D., *see* Jacoby, David B.

Gage, Fred H., Intracerebral grafting of genetically modified cells acting as biological pumps 439
Garattini, Silvio, *see* Corda, Daniela
Garlind, Anita, *see* Fowler, Christopher J.
Garthwaite, John, *see* Meldrum, Brian
Gaskell, Simon J., Mass spectrometry at high mass – virtues and vices of some new approaches 99
Georgiev, Vassil St., Immunomodulatory activity of small peptides 373
Giles, Heather, More selective ligands at eicosanoid receptor subtypes improve prospects in inflammatory and cardiovascular research 301
Gingrich, Jay A., *see* Andersen, Peter H.
Gispen, Willem Hendrik, Therapeutic potential for melanocortins in peripheral nerve disease 221
Godfraind, Théophile and Kazda, Stanislav, Drug treatment of stroke and ischemic brain (IUPHAR satellite) 347
Godfraind, Théophile, *see* Salomone, Salvatore
Goldie, Roy G., Fernandes, Lynette B., Farmer, Stephen G. and Hay, Douglas, W. P., Airway epithelium-derived inhibitory factor 67
Gonzales, Reuben, A., NMDA receptors excite alcohol research 137
Gottesman, Michael M., *see* Dickson, Robert B.
Green, Jack Peter, Pharmacological receptors: the need for a compendium of classification, nomenclature and structure 13
Greengard, Paul, *see* Piomelli, Daniele
Grillner, Sten, *see* Headley, P. Max
Gualtieri, Fulvio, Pfeiffer's rule OK? (Letter) 315

Haefely, Willy, Martin, James R. and Schoch, Peter, Novel anxiolytics that act as partial agonists at benzodiazepine receptors 452
Harper, Diane H., *see* Leff, Paul
Hausdorff, William P., *see* Lefkowitz, Robert J.
Hay, Douglas W. P., *see* Goldie, Roy G.
Headley, P. Max and Grillner, Sten, EAA PHARMACOLOGY: Excitatory amino acids and synaptic transmission: the evidence for a physiological function 205
Hegde, Sharath S., Significance of peripheral dopaminergic system in cardiovascular and renal function (IUPHAR satellite) 350
Henderson, Graeme, Complexity of 5-HT pharmacology compounded by electrophysiological data 265
Henley, Jeremy M., *see* Barnard, Eric A.
Hietala, Jarmo, Lappalainen, Jaakko, Koulo, Markku and Syvälahti, Errka, Dopamine D_1 receptor antagonism in schizophrenia: is there reduced risk of extrapyramidal side-effects? 406
Hiley, C. Robin, Chemistry and biology of endothelin (IUPHAR satellite) 341
Holtzman, Stephen G., Caffeine as a model drug of abuse 355
Honoré, Tage, *see* Watkins, Jeff C.
Horrell, Ann, Improving the climate for women and minorities in academic and scientific careers 267
Howlett, Allyn C., Reverse pharmacology applied to the cannabinoid receptor 395

IJzerman, Ad and van Galen, Philip, Pharmacology of purinergic receptors: implications for drug design (IUPHAR satellite) 342
Izquierdo, Ivan, Acetylcholine release is modulated by different opioid receptor types in different brain regions and species 179
Izquierdo, Ivan, Nimodipine and the recovery of memory 309

Jacoby, David B. and Fryer, Allison D., Abnormalities in neural control of smooth muscle in virus-infected airways 393
Jenkinson, Donald and Abbott, Alison, Are molecular and electrophysiological data refining models of agonism? 91
Johnson, Kenneth M., *see* Lodge, David
Jones, Brian J., *see* Pratt, Gerard D.
Junco, Maria *see* Boscá, Lisardo

Kaplan, Ofer and Cohen, Jack S., Magnetic resonance as a non-invasive tool to study metabolism in pharmacological research 398
Kazda, Stanislav, *see* Godfraind, Théophile
Kenakin, Terry, Morgan, Paul H. and Lutz, Michael, Drug and tissue factors both confound K_A measurements (Letter) 273
Kennett, Guy A., *see* Curzon, Gerald
Kiernan, John A., Neurogenic inflammation (Letter) 316
Kilpatrick, Gavin J., *see* Pratt, Gerard D.
Klockgether, T., *see* Wüllner, U.
Kohama, Kazuhiro, Inhibitory mode for Ca^{2+} regulation 433
Kornhuber, Johannes, Glutamate and schizophrenia (Letter) 357
Koulu, Markku, *see* Hietala, Jarmo
Krogsgaard-Larsen, Povl, *see* Watkins, Jeff C.
Krueger, James M., Somnogenic activity of immune response modifiers 122

Landry, Yves, *see* Mousli, Mouafak
Lappalainen, Jaakko, *see* Hietala, Jarmo
Leander, J. David, *see* Willetts, Joyce
Leff, Paul, Dougall, Iain G., Harper, Diane H. and Dainty, Ian A., Errors in agonist affinity estimation: do they and should they occur in isolated tissue experiments? 64
Lefkowitz, Robert J., Hausdorff, William P. and Caron, Marc G., Role of phosphorylation in desensitization of the β-adrenoceptor 190
Lehmann, John, Randle, John C. R. and Reynolds, Ian J., EAA receptors: NMDA modulatory sites, kainate cloned and a new role in AIDS 1
Leslie, Ronald A., *see* Pratt, Gerard D.
Lester, David S., *see* Epand, Richard M.
Liu, Yuechueng and Storm, Daniel R., Regulation of free calmodulin levels by neuromodulin: neuron growth and regeneration 107
Lodge, David and Collingridge, Graham, *Les agents provocateurs:* a series on the pharmacology of excitatory amino acids 22
Lodge, David and Johnson, Kenneth M., EAA PHARMACOLOGY: Noncompetitive excitatory amino acid receptor antagonists 81
Lucchesi, Benedict R., *see* Werns, Steven W.
Luini, Alberto, *see* Corda, Daniela
Lummis, Sarah C. R., *see* Rauh, James J.
Lutz, Michael, *see* Kenakin, Terry

MacDonald, John F. and Nowak, Linda M., EAA PHARMACOLOGY: Mechanisms of blockade of excitatory amino acid receptor channels 167
Mackay, Dennis, Agonist potency and apparent affinity: interpretation using classical and steady-state ternary-complex models 17
Mackay, Dennis, Agonist potency, affinity and efficacy 102
Maeyama, Kazutaka, *see* Watanabe, Takehiko
Magistretti, Pierre J., VIP neurons in the cerebral cortex 250
Maione, Theodore E. and Sharpe, Richard J., Development of angiogenesis inhibitors for clinical applications 457
Manara, Luciano and Bianchetti, Alberto, The phenylethanolaminotetralines: new selective agonists for atypical β-adrenoceptors (Letter) 229
Martin, James R., see Haefely, Willy
Max, B., This and That: cheap drinks and expensive drugs 56
Max, B., This and That: an unsuitable eponym, leeches, and the transmutation of the disciplines 143
Max, B., This and That: on artificial fats and the first effective treatment for fits 225
Max, B., This and That: genetics, statistics and common sense 311
Max, B., This and That: drug tolerance and great expectations 401
Max, B., This and That: the indelibility of memory and the chemotherapy of colour 479
Mayer, Mark L. and Miller, Richard J., EAA PHARMACOLOGY: Excitatory amino acid receptors, second messengers and regulation of intracellular Ca^{2+} in mammalian neurons 254
McBain, Chris J., see Dingledine, Raymond
McCormick, David A., Refinements in the *in vitro* slice technique and human neuropharmacology 53
McNamara, James O., *see* Dingledine, Raymond
Meldrum, Brian and Garthwaite, John, EAA PHARMACOLOGY: Excitatory amino acid neurotoxicity and neurodegenerative disease 379
Millan, Mark J., κ-Opioid receptors and analgesia 70
Miller, Richard J., *see* Mayer, Mark L.
Morgan, Paul H., *see* Kenakin, Terry
Mousli, Mouafak, Bueb, Jean-Luc, Bronner, Christian, Rouot, Bruno and Landry, Yves, G protein activation: a receptor-independent mode of action for cationic amphiphilic neuropeptides and venom peptides 358

Nahas, Gabriel G., Legislation and drug abuse (Letter) 101
Nahorski, Stefan R., *see* Zaagsma, Johan
Nantel, François, *see* Regoli, Domenico
Nayler, Winnifred G., Endothelin: isoforms, binding sites and possible implications in pathology 96
Naylor, Robert J., *see* Pratt, Gerard D.
Nelson, David R., *see* Pratt, Gerard D.
Nicholls, David and Attwell, David, EAA PHARMACOLOGY: The release and uptake of excitatory amino acids 462
Nicholson, David, *see* Connick, Jonathan
Noach, E. L., The history of pharmacology in the Netherlands 236
Nowak, Linda M., *see* MacDonald, John F.

Oberpichler, Heike, 3rd International symposium on pharmacology of cerebral ischemia (IUPHAR satellite) 351
O'Neill, Cora, *see* Fowler, Christopher J.

Palacios, Jose M., *see* Pratt, Gerard D.
Pearson, Jeremy D., *see* Boeynaems, Jean-Marie
Piomelli, Daniele and Greengard, Paul, Lipoxygenase metabolites of arachidonic acid in neuronal transmembrane signalling 367
Pratt, Gerard D., Bowery, Norman G., Kilpatrick, Gavin J., Leslie, Ronald A., Barnes, Nicholas M., Naylor, Robert J., Jones, Brian J., Nelson, David R., Palacios, Jose M., Slater, Paul and Reynolds, D. John M., Consensus meeting agrees distribution of 5-HT_3 receptors in mammalian hindbrain 135
Pretolani, Marina, *see* Chignard, Michel

Quang Do, Kim, *see* Cuenod, Michel

Rampe, David and Triggle, David J., New ligands for L-type Ca^{2+} channels 112
Randle, John C. R., *see* Lehmann, John
Rauh, James J., Lummis, Sarah C. R. and Sattelle, David B., Pharmacological and biochemical properties of insect GABA receptors 325
Ravard, S. and Dourish, C. T., Cholecystokinin and anxiety 271
Refsum, Helga and Ueland, Per Magne, Clinical significance of pharmacological modulation of homocysteine metabolism 411
Regoli, Domenico, Rhaleb, Nour-Eddine, Dion, Stéphane and Drapeau, Guy, New selective bradykinin receptor antagonists and bradykinin B_2-receptor characterization 156
Regoli, Domenico and Nantel, François, Direct activation of G proteins (Letter) 400
Reifsnyder, David H., *see* Beavo, Joseph A.
Reynolds, D. John M., *see* Pratt, Gerard D.
Reynolds, Ian J., *see* Lehmann, John
Rhaleb, Nour-Eddine, *see* Regoli, Domenico
Riveau, Gilles J. and Audibert, Françoise M., Synthetic peptide vaccines against pathogens and biological mediators 194
Roe, Francis J. C., Effects of nicotine on biological systems (IUPHAR satellite) 346
Rogers, Duncan F., see Barnes, Peter J.
Roques, Bernard P. and Beaumont, Ann, Neutral endopeptidase-24.11 inhibitors: from analgesics to antihypertensives? 245
Rouot, Bruno, *see* Mousli, Mouafak
Ruffolo, Jr., Robert R., Signs of support (Letter) 61

Salomone, Salvatore and Godfraind, Theophile, Drugs that reverse chloroquine resistance in malaria 475
Salt, T. E., Excitatory amino acids: an update (IUPHAR satellite) 352
Satelle, David B., *see* Rauh, James J.
Saxena, Pramod R. and Villalón, Carlos M., Brain 5-HT_{1A} receptor agonism: a novel mechanism for antihypertensive action 95
Schellens, J. H. M., *see* Breimer, D. D.
Schoch, Peter, *see* Haefely, Willy
Schoepp, Darryle, Bockaert, Joel and Sladeczek, Fritz, EAA PHARMACOLOGY: Pharmacological and functional characteristics of metabotropic excitatory amino acid receptors 512
Schoner, Wilhelm, Endogenous digitalis-like factors: purification, properties, physiological functions (IUPHAR satellite) 349
Senogles, Susan E., *see* Andersen, Peter H.
Sharpe, Richard J., *see* Maione, Theodore E.
Shen, Ke-Fei, *see* Crain, Stanley M.
Sigel, Erwin, $GABA_A$ receptor: complex picture confused 103
Sinclair, David, Objectives of radical antivivisectionists? (Letter) 230
Singer, Wolf, *see* Collingridge, Graham L.
Sladeczek, Fritz, *see* Schoepp, Darryle
Slater, Paul, *see* Pratt, Gerard D.
Spano, Pierfranco, Dopamine '90 (IUPHAR satellite) 349
Storm, Daniel R., *see* Liu, Yuechueng
Strange, Philip G., Subtypes of the D_2 dopamine receptor (Letter) 357
Streit, Peter, *see* Cuenod, Michel
Struyker Boudier, Harry A. J., van Bortel, Luc M. A. B. and De Mey, Jo G. R., Remodeling of the vascular tree in hypertension: drug effects 240
Struyker Boudier, Harry A. J., Pharmacology of cardiac and vascular remodelling (IUPHAR satellite) 351
Syvälahti, Erkka, *see* Hietala, Jarmo
Szolcsányi, János, *see* Bevan, Stuart

Taylor, Colin W., Receptor-regulated Ca^{2+} entry: secret pathway or secret messenger? 269
Tephly, Thomas R. and Burchell, Brian, UDP-glucuronosyltransferases: a family of detoxifying enzymes 276
Timmerman, H. *see* Zeelen, F. J.
Timms, David, *see* Ward, Walter H. J.
Tisdale, Michael J., Newly identified factors that alter host metabolism in cancer cachexia 473
Tortella, Frank C. and Bowery, Norman G., Tortella and Bowery reply (Letter) 147
Triggle, David J., *see* Rampe, David
Turski, Lechoslaw, *see* Wachtel, Helmut

Ubben, David, *see* Cook, Nigel S.
Ueland, Per Magne, *see* Refsum, Helga

van Bortel, Luc M. A. B., *see* Struyker Boudier, Harry A. J.
van Galen, Philip, *see* IJzerman, Ad
Versteeg, Dirk H. G., CNS effects of stress hormones and neuropeptides (IUPHAR satellite) 347
Villalón, Carlos M., *see* Saxena, Pramod R.

Wachtel, Helmut and Turski, Lechoslaw, Glutatmate: a new target in schizophrenia? 219
Wada, Hiroshi, *see* Watanabe, Takehiko
Wallace, John L., 5-Lipoxygenase: a rational target for therapy of inflammatory bowel disease? 51
Wang, Kevin K. W., Developing selective inhibitors of calpain 139
Ward, Walter H. J., Timms, David and Fersht, Alan R., Protein engineering and the study of structure–function relationships in receptors 280
Watanabe, Takehiko, Yamatodani, Atsushi, Maeyama, Kazutaka and Wada, Hiroshi, Pharmacology of α-fluormethylhistidine, a specific inhibitor of histidine decarboxylase 363
Watkins, Jeff C., Krogsgaard-Larsen, Povl and Honoré, Tage, EAA PHARMACOLOGY: Structure–activity relationships in the development of excitatory amino acid receptor agonists and competitive antagonists 25
Werns, Steven W. and Lucchesi, Benedict R., Free radicals and ischemic tissue injury 161
Weston, Arthur H., *see* Edwards, Gillian
Whetton, Anthony D., The biology and clinical potential of growth factors that regulate myeloid cell production 285
Whittaker, Victor P., The contribution of drugs and toxins to understanding of cholinergic function 8
Willetts, Joyce, Balster, Robert L. and Leander, J. David, EAA PHARMACOLOGY: The behavioural pharmacology of NMDA receptor antagonists 423
Wonnacott, Susan, The paradox of nicotinic acetylcholine receptor upregulation by nicotine 216
Wüllner, U. and Klockgether, T., $GABA_B$ receptors and spasticity 103

Yamatodani, Atsushi, *see* Watanabe, Takehiko
Young, Anne B. and Fagg, Graham E., EAA PHARMACOLOGY: Excitatory amino acid receptors in the brain: membrane binding and receptor autoradiographic approaches 126

Zaagsma, Johan and Nahorski, Stefan R., Is the adipocyte β-adrenoceptor a prototype for the recently cloned atypical 'β_3-adrenoceptor'? 3
Zbinden, Gerhard, Alternatives to animal experimentation: developing *in vitro* methods and changing legislation 104
Zeelen, F. J. and Timmerman, H., New perspectives in histamine research (IUPHAR satellite) 344
Zernig, Gerald, Widening potential for Ca^{2+} antagonists: non-L-type Ca^{2+} channel interaction 38
Ziderman, Irving I., Tyrian and hyacinth purples (Letter) 60
Ziegler, Daniel M., Flavin-containing monoxygenases: enzymes adapted for multisubstrate specificity 321

Subject Index

Compiled by Sara Firman

A64077 52, 304
abecarnil (ZK112119) 455
absinthe 58
acetorphan 247
acetylcholine 8
  and phencyclidine 82
acetylcholine release 179
N-acetylcysteine 63
trans-ACPD 26, 512
ACTH (adrenocorticotropic hormone) 221, 358
actomyosin 433
acyclovir 201
adenosine analogs 413
adenosine receptors 342
adhesion molecules 391
adrenoceptors 341
β-adrenoceptors
  desensitization 190
  and G proteins 492
  molecular biology 92
  structure–function 280
β_3-adrenoceptors 3, 229 Letter
adrenocorticotropic hormone (ACTH) 221, 358
agonism: models of 91
agonist affinity 17, 64, 102 Letter, 273 Letter
agonists, partial 93, 452
AH21132 348
AIDS
  chemotherapy 198
  drug testing 56
  and NMDA 1
AIDS-related Kaposi's sarcoma 457
airway epithelium-derived inhibitory factor (EpDIF) 67
(+)-AJ76 49
Albert, Adrien (Obituary) 142
Albright hereditary osteodystrophy 471
alcoholism 311
alcohols 431
  and NMDA receptors 84, 137
allopurinol 163
alpidem (SL800342) 455
Alzheimer's disease 386, 389
  and signal transduction 183
amastatin 375
D-α-aminoadipate 25
AMPA receptors 23, 126, 290, 334
  molecular biology 504
AMPA-type glutamate autoreceptors 462
amrinone 154
amyotropic lateral sclerosis (ALS) 386
anabasine 216
anagrelide (BL4162A) 154
analgesics
  endopeptidase-24.11 inhibitors 245
  NMDA antagonists 307
  and κ-opioid agonists 70
anatoxin 216
anesthetics 431
angiogenesis inhibitors 457
angiotensin-converting enzyme (ACE) inhibitors 242
aniline purple 479
animal experiments 104, 230 Letter, 275 Letter
aniracetam 3
anthraquinones 479
anticholinesterases 10
antihypertensive drugs 240, 245, 346
antipsychotic drugs 49, 213, 219
anxiety
  and cholecystokinin 271
  and 5-HT_{1C} receptors 181
L-AP4 receptors 26, 130
D-AP5 29
arachidonic acid 367
argiotoxin 636 2, 83
Ariens, E. J. 237
βARK 190
arthropod toxins 84
aspartame 432
aspartate 462
aspirin 347, 471
asthma 348, 393
atrial natriuretic peptide (ANP) receptors 245
aurintricarboxylic acid 199
α_2-autoreceptors 440
azauridine 415
3′-azido-2′,3′-dideoxyuridine 202
aziridinium compounds 12
AZT *see* zidovudine

Baclofen 103 Letter
bacterial diseases: vaccines 196
bacteriorhodopsin 492
barbiturates 84, 325
BayK8644 433
benzodiazepine receptor partial agonists 452
benzodiazepines 175, 325
benzomorphans 82
benzothiazepines 38, 112
Bernard, Claude 8
bestatin 375
bezafibrate 450
BHT920 49
BL4162A (anagretide) 154
BMAA 385
BMY14802 213
BMY20064 113
BN52021 345
BOAA 385
bombolitin I 361
bradykinin 358, 400 Letter
desArg^9-bradykinin 157
bradykinin B_2 antagonists 156
brain dialysis (*in vivo*) 116
brain slice technique 53
brain-derived neurotrophic factor (BDNF) 389
bretazenil (Ro166028) 452
BRL28410 4
BRL34915 (cromakalim) 188
BRL35135 4
BRL37344 4
BRL38226 417
bromine 227
5-bromowillardiine 29
Bülbring, Edith (Obituary) 362
α-bungarotoxin 9
BVaraU 201
BVDU 201
BWA4C 348
BWB70C 348

C-fos 308
Ca^{2+} antagonists 38, 347
  and malaria 475
  mitochondrial sites 43
Ca^{2+} channels
  L-type 112
  non-L-type 38
Ca^{2+} entry 269
Ca^{2+} regulation, inhibitory 433
cachexia (cancer) 473
caffeine 355
calcitonin gene-related peptide (CGRP) 186
calcium dobesilate 450
calmodulin 107
calpain inhibitors 139
calpastatin 141
calpeptin 140
8-chloro-cAMP 472
cancer
  cachexia 473
  chemotherapy 305
cannabinoid receptors 357, 395
capsaicin 189, 330
captopril 163
carbazeran 154
carbohydrates: as receptors 177
cardiotonic drugs 154
cardiovascular disorders
  and fibrinogen 444
  and prostaglandins 302
CCK *see* cholecystokinin
CD4 198
celiprolol 450
cellular imaging 55
cerebral ischemia (stroke) 347, 351, 444
CGP20712A 4
CGP37849 29, 425

CGP42500 418
CGP45715 348
CGS19755 1, 29, 423
chemotherapy, cancer 305
chimeric receptors 280
7-chlorokynurenate 84
chloroquine resistance 475
chlorothiazide 420
chlorpromazine 61
cholecystokinin: and anxiety 271, 432
cholecystokinin (CCK) receptors 271
choline 8
choline acetyltransferase 8
cholinergic nerve terminal 8
CI914 (imazodan) 154
CI988 432
ciclosporin 376
cilostamide (OPC3689) 154
ciprofibrate 450
clofibrate 450
clonazepam 454
clonidine 93
clozapine 49, 176
CNQX 351
cocaine 101 Letter
cochineal 480
colony-stimulating factors (CSFs) *see* G-CSF; GM-CSF; M-CSF
corticotropin-releasing factor (CRF) 188
corticotropin-releasing factor (CRF)–glucocorticoid axis 125
CP55244 397
CP55940 395
CPP 1, 29, 181, 423
CPPene 29, 352
crabolin 361
CRF *see* corticotropin-releasing factor
cromakalim (BRL34915) 188
cromoglicate 189
Cruelty to Animals Act (1876) 8
L-CSA 29
curare 8
cyclazocine 213
cyclic nucleotide phosphodiesterases 471
cytisine 216
cytochrome P-450 342
and drug metabolism 221
cytokinase: and sleep 124

D4T 202
DADLE 179
DAMGO 179
decarboxylation 145
deferoxamine 163
defibrotide 450
desensitization 190
devazepide 271
dextromethorphan 146 Letter, 147 Letter, 214
diabetes mellitus 343
diazoxide 420
2′,3′-dideoxycytidine 200
2′,3′-dideoxyinosine 57, 200
digitalis-like factors 349
1,4-dihydropyridines 38, 112
dimethylthiourea 163
dipyridamole 154
diuretics 245
divaplon (RU32698) 454
dizocilpine (MK801) 29, 51, 169, 381, 423
domoate 29, 384
dopamine
nucleus accumbens 121
and phencyclidine 82
release of 118
dopamine (D_1) antagonists: and schizophrenia 49, 185 Letter, 406
dopamine autoreceptor 49
dopamine receptors 349
peripheral 350
subtypes 231, 357 Letter
DP receptors 93, 302
DPDPE 179
drug abuse 101 Letter, 355
drug delivery: LDL receptors 177
drug metabolism 221, 276, 312, 321
drug tolerance 401
drugs of abuse 120
DSLET 179
dyes 60 Letter, 479
dynorphin A_{1-13} 179, 360
dynorphin A_{1-17} 71

E-64 140
EDRF *see* endothelium-derived relaxing factor
EGF (epidermal growth factor) 472
eicosanoid receptors 301
electrophysiology: brain slice technique 53
eledoisin-like peptide 186
EMD52692 418
endopeptidase-24.11 245
endothelin 96, 341
endothelium: in hypertension 242
endothelium-derived relaxing factor (EDRF) 344
see also nitric oxide
endotoxin 123
enoximone (MDL17043) 154
epidermal growth factor (EGF) 472
epigenesis 389
epilepsy 334
erythropoietin 288
ES37 247
ES85 247
ethylketocyclazocine 179
ethynylbenzenealkanamines 112
excitatory amino acid antagonists
behavioral pharmacology 423
noncompetitive 81
excitatory amino acid receptors 1, 22
autoradiography 23, 126
channel blockade 167
epilepsy 334
metabotropic 23, 132, 254, 512
second messengers 254
structure–activity 25
synaptic plasticity 290, 307
synaptic transmission 205
excitatory amino acids 352
neurotoxicity 379
release and uptake 462, 477 Letter

Fats, artificial 225
FddClUrd 202
feeding behavior: and 5-HT_{1C} 181
fenofibrate 450
FG8205 94, 454
fibrinogen 444
fibroblast growth factor, basic (bFGF) 459
FK33824 179
flavin-containing monooxygenases (FMO) 321
flesinoxan 95
α-fluoromethylhistidine 363
folic acid 413
forphenicine 375
FP receptors 303
free radicals
ischemic tissue injury 161
scavengers for 163
furosemide 189

G protein-linked receptors 492
G proteins 176, 358, 400 Letter
G-CSF (granulocyte colony-stimulating factor) 285
GABA: as model anesthetic target 431
GABA receptors: insect 325
$GABA_A$ receptors 103 Letter, 229, 452
$GABA_B$ receptors 188
and spasticity 103 Letter
GABA transporter: cloning of 435
galanin 188
ganciclovir 201
gene transfer 437
genetic polymorphism 342
genetic screening 312
glibenclamide 188
glutamate 462
and schizophrenia 219, 357 Letter
glutamine synthetase 463
glycine site 1, 82
GM-CSF (granulocyte–macrophage colony-stimulating factor) 285
GR32191 303, 348
GR63799X 301
grafting 389
granulocyte colony-stimulating factor (G-CSF) 285
granulocyte–macrophage colony-stimulating factor (GM-CSF) 285
growth hormone: and sleep 125
Guam disease 385
guanine nucleotide-binding regulatory proteins *see* G proteins

HA966 1, 25, 82
HACBO-Gly 247
L-HCA 29
hCG (human chorionic gonadotropin) vaccine 197
L-HCSA 29
hebbian synapse 290
hematopoiesis 287
heparin 199
HEPT 202
heptachlor 327
heptachlor epoxide 327
hippocampus-derived neurotrophic factor (HDNF) 389
hirudin 144
histamine 188
histamine H_2 agonists 344
histamine H_3 antagonists 344
histamine H_3 receptors 188
histidine decarboxylase 363
HOE166 112
homocysteic acid 477 Letter
homocysteine metabolism 411
5-HPCA 29
7-HPCA 29
12-HPETE 367
HPMPC 201
5-HT_{1A} agonists: hypertension 95
5-HT_3 antagonists: and schizophrenia 49
5-HT receptors: classification 15
5-HT_{1A} receptors 266
5-HT_{1C} receptors 181
5-HT_2 receptors 266
5-HT_3 receptors 135, 265
human chorionic gonadotropin (hCG) vaccine 197
human platelet factor 4 (PF4) 457
Huntington's disease 386
hyacinth purple 60 Letter
hypertension 95, 240
hypertensive rat (spontaneous) 403

IBMX 150
ibotenate 26
ICI204219 304, 348
ICS205930 265
ifenprodil 1
imazodan (CI914) 154
imidazoline receptors 7 Letter
immune response modifiers 122, 373
impromidine 344
indolidan (LY195115) 154
inflammation
neurogenic 185, 316 Letter
and prostaglandin E (PGE) 301
inflammatory bowel disease 51
interleukin 1 124, 286, 446
interleukin 3 287
interleukin 4 288
interleukin 5 288
interleukin 6 288, 446
IPD1151T 349, 363

irritable bowel syndrome 114
ischemia
  and free radicals 161
  and glutamate 462
ischemia, cerebral (stroke) 347, 351, 444
3-isobutyl-1-methylxanthine 154
isoniazid 415

K$^+$ channel openers 417
K^+ channels
  and lipoxygenase metabolites 369
  and phencyclidine 82
kainate 383
kainate receptors 2, 23, 126
  molecular biology 504
kallidin 156, 358
desArg^{10}-kallidin 157
Kaposi's sarcoma, AIDS-related 457
ketamine 81, 169, 213
12-KETE 368
12-ketoendrin 327
KFM19 342
kinetensin 360
KRN2391 419
kynurenate 82

L365031 271
L365260 271
L651392 52
L652469 114
lac (dye) 481
Lambert Eaton myasthenic syndrome (LEMS) 392
Laqueur, Ernst 237
LDL receptors: and drug delivery 177
leeches 144
lemakalim 417
leupeptin 140
lignocaine 189
lindane 327
lipid-mobilizing factor (LMF) 474
lipopeptides 375
5-lipoxygenase 51
12-lipoxygenase 367
lipoxygenase metabolites 367
lithium 177, 471
lobeline 216
long-term potentiation 178, 290, 371
LY53857 266
LY195115 (indolidan) 154
LY211808 418
LY222675 418
LY274614 423

M&B22948 (zaprinast) 154
M-CSF (macrophage colony-stimulating factor) 286
magnesium *see* Mg^{2+}
Magnus, Rudolph 236
malaria 475
  vaccine 196
marijuana 59
mass spectrometry 99
mast cell degranulating peptide 361
mastoparan 358
MCI176 113
McN5691 112
McN6186 112
MDL12330A 113
MDL17043 (enoximone) 154
mdr genes 39, 305, 475
MEAP 179
mecamylamine 216
melanocortins 221
α-melanocyte-stimulating hormone (α-MSH) 221
melittin 358
membranes: biophysical properties 317
memory
  and nimodipine 309
  and opioids 179
menthol 114
N-2-mercaptopropionyl glycine 162
metabotropic receptors 23, 132, 254, 512
metalloproteinase, tissue inhibitors of (TIMP-1 and -2) 458
methotrexate 415
8-methoxymethyl-3-isobutyl-1-methyl-xanthine 154
Mg^{2+}: and NMDA 83
migraine 181
milrinone (WIN47203) 154, 471
minorities: in academic science 267
minoxidil 420
MK571 348
MK801 (dizocilpine) 29, 51, 169, 381, 423
MK886 52, 304
monoamine reuptake systems 119
morphinans 82
morphine 179
α-MSH (α-melanocyte-stimulating hormone) 221
multidrug resistance 39, 305, 475
muramyl dipeptides 195
muramyl peptides 122, 373
muscarine 9
muscarinic acetylcholine receptors 9
  and G proteins 492
  and phencyclidine 82
  and viral respiratory infections (M_2) 393
myosin ATPase 433

Na$^+$ channels 431
Na^+–Ca^{2+} exchange 40
narcotics 403
NBQX 29, 351
nedocromil 189
nerve growth factor (NGF) 389, 438
Netherlands: pharmacology 236
neurodegenerative diseases: and excitatory amino acids 379
neurogenic inflammation 185, 316 Letter
neurokinin A 186
neurokinins *see* tachykinins
neurolathyrism 385
neuroleptics 176
  and dopamine release 118
neuromodulin 107
neuronal plasticity 290, 307
neuronal signalling 367
neuropeptide Y 188, 440
neurotensin 360
neurotransmitters: identification 207
neurotrophins 389
niceritrol 450
nicorandil 419
nicotine 9, 216, 346
nicotinic acetylcholine receptors 9, 431, 485
  muscle-type 92
  neuronal-type 92
  and phencyclidine 82
  upregulation 216
niguldipine 114
nimodipine 309
nitric oxide (NO) 344, 348
nitrous oxide (N_2O) 413
NMDA: as model anesthetic target 431
NMDA antagonists
  as analgesics 307
  behavioral pharmacology 423
  and cerebral ischemia 351
NMDA receptors 1
  and alcohol 84, 137
  autoradiography 23, 128
  channel blockade 167
  and dextromethorphan 146 Letters
  epilepsy 334
  second messengers 254
  and sigma(σ)-binding site 213
  synaptic plasticity 290, 307
  synaptic transmission 205
NMDA-type glutamate autoreceptors 462
NMR (nuclear magnetic resonance) 398
non-NMDA receptors *see* AMPA receptors: kainate receptors
noradrenaline
  and neurogenic inflammation 187
  and phencyclidine 82
norbinaltorphimine 70
NPC12626 1, 425
nuclear magnetic resonance (NMR) 398
nucleoside transporter 38

ODAP 29
8-OH-DPAT 266
olestra 225
olvanil 189
ONO1078 304
OPC3689 (cilostamide) 154
opioid agonists 179
κ-opioid agonists 70
opioid receptors: acetylcholine release 179
κ-opioid receptors 70, 440
opioids
  excitatory effects 77
  and memory 179
  and neurogenic inflammation 187
ORG2766 221
organophosphates 10
orphan receptors 175
oxipurinol 163
oxygen free radicals 161

P1060 418
P-450 *see* cytochrome P-450
P-glycoprotein 39, 305, 475
PAF (platelet-activating factor) 345
pain: and excitatory amino acids 307
panic disorder: and 5-HT_{1C} receptors 181
papaverine 154
Parkinson's disease 386, 389
patch-clamping 54
PD117302 70
2,3-PDA 28
PDGF (platelet-derived growth factor) 472
D-penicillamine 413
pentazocine 213
pentoxifylline 450
peptide drugs: oral administration 353
peptide vaccines 194
pesticides 325
Pfeiffer's rule 148, 315 Letter
PGE (prostaglandin E): and inflammation 301
pharmacology: in The Netherlands 236
phenothiazines 154
phencyclidine 29, 51, 81, 169, 213, 423
phenylalkylamines 38, 112
phenylethanolaminotetralines 229 Letter
phenytoin 415
philanthotoxin 433 83
phosphodiesterase inhibitors 150
phosphodiesterase isozymes 151, 348
phosphoramidon 247
L-*O*-phosphoserine 29
photosynthetic reaction center 492
physostigmine 10
picrotoxin 325
pinacidil 418
platelet-activating factor (PAF) 345
platelet-derived growth factor (PDGF) 472
PMEA 201
polyamine 40/80 358
polyamine site 1, 83
poly(I·C) 123
population analysis 404
potassium *see* K^+
presynaptic receptors 440
priapism 143
propranolol 450
prostacyclin 34
prostaglandin E (PGE): and inflammation 301
prostaglandin receptors 301
prostaglandins
  and cardiovascular disease 302
  and sleep 124
protein engineering 280
protein kinase A 190, 471

protein kinase C 177
protein kinase C inhibitors 317, 471, 477 Letter
pseudohypoparathyroidism 471
P_2 purinoceptors 34

Quazinone (Ro136438) 154
quinethazone 420
quinolinate 2, 29

R75231 342
RB45 247
receptors
  carbohydrates 177
  chimeric 280
  classification 13, 24
  metabotropic 23, 132, 254, 512
  orphan 175
  presynaptic 440
  structure–function 280
  see also named types
renin vaccine 197
reserpine 61
resibufogenin 349
resiniferatoxin 330
reverse pharmacology: cannabinoid receptors 395
rhodopsins 492
Ro136438 (quazinone) 154
Ro166028 (bretazenil) 452
Ro201724 154
Ro31-6930 418
rolipram (ZK62711) 154, 471
RP52891 421
RU32514 454
RU32698 (divaplon) 454

S0121 418
salmeterol 4
salvarsan 483
SC41930 52
SC46542 248
SCH23390 49, 185 Letter, 349, 406
SCH34826 249
SCH39370 247
schizophrenia
  and glutamate 219, 357 Letter
  and receptor antagonists 49, 185 Letter, 406
sclerosis, amyotropic lateral (ALS) 386
SDZMKS492 348
SDZPC0400 417
serotonin *see* 5-HT
SG103 419
SG209 419
σ-binding site 213, 274 Letter
  and phencyclidine 82
SKF96231 348
SKF104353 348
SKF106203 348
SKF10047 29, 213
SKF11197 420
SKF94120 154
SL800342 (alpidem) 455
sleep 122
sodium *see* Na^{2+}
somatostatin 188, 360
spasticity: and $GABA_B$ receptors 103 Letter
sphingosine 319
spider venoms 2
SQ29072 247
SR33557 112
SR44944 418
SR46142A 418
stanozolol 450
stereochemical nomenclature 61 Letter
stereoisomerism: Pfeiffer's rule 148, 315 Letter
steroid receptors 175
steroids: and angiogenesis 460
stroke (cerebral ischemia) 347, 351, 444
substance P
  and G proteins 358
  and neurogenic inflammation 186
superoxide dismutase 161
synaptophysin 391
synaptoporin 391

Tachykinin antagonists 186
tachykinins 393
  neurokinin A 186
TBOB 327
TBPS 327
TCP 29
ternary complex models 17, 64, 102 Letter
tetrandrine 114
theophylline 154
thiorphan 247
thujone 58
thymic peptides 376
TIBO 202
ticlopidine 450
TIMP-1 and -2 458
TNF-α (tumor necrosis factor-α) 457, 473
toxaphene 327
TP receptors 303
trazodone 181
tumor necrosis factor-α (TNF-α) 457, 473
Tyrian purple 60 Letter, 480
tyrophostins 471
tyrosine hydroxylase 439
tyrosine kinases 472

U46619 302
U50488H 70, 179
U74006F 351
U75412E 349
UDP-glucuronosyltransferases 276
(+)-UH232 49
UK69578 247
urapidil 96

Vaccine design 194
vascular disease 302, 411, 444
vascular remodelling 351
vasoactive intestinal peptide (VIP) receptors 250
verapamil 39, 305, 475
vesamicol 12
vinpocetine (TCV-3B) 154
VIP (vasoactive intestinal peptide) receptors 250
viral infections
  respiratory 393
  and sleep 123
  vaccines 195

WAY120129 418
WAY120491 417
willardiine 29
WIN47203 (milrinone) 154, 471
WY27569 114

Xamoterol 94
xanthine oxidase 164

Zaprinast (M&B22948) 154
zidovudine 56, 200
ZK62711 (rolipram) 154, 471
ZK110841 302
ZK112119 (abecarnil) 455
Zn^{2+}: and NMDA 83